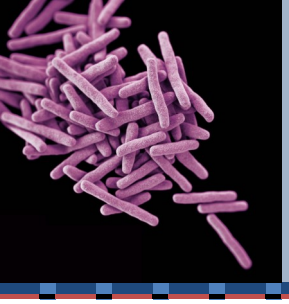

Mycobacterium tuberculosis: Diagnostic Principles and Procedures

April 24-27, 2018 ● Atlanta, GA

Sponsored by the National Laboratory Training Network *in collaboration with the* National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of Tuberculosis Elimination, and Laboratory Training Team, Division of Laboratory Systems, Center for Surveillance, Epidemiology, and Laboratory Services, Centers for Disease Control and Prevention

DESCRIPTION

This intermediate-level course will further educate participants on diagnostic *Mycobacterium tuberculosis* complex (MTBC) principles and procedures. Lectures, hands-on laboratory exercises, group discussions, and interactive sessions will be used to increase knowledge. State-of-the-art diagnostic molecular and growth-based methods for detection, isolation, identification (ID), and drug susceptibility testing (DST) of MTBC will be discussed and compared. Attendees will be provided with the tools necessary to determine appropriate safety practices and testing algorithms. Case studies will highlight interesting tuberculosis case results including the importance of accurate result interpretation, collaboration with TB Control Programs and other laboratories, lessons learned, and problem-solving. Attendees are expected to present case studies and to participate in group discussions by describing testing algorithms/methods.

OBJECTIVES

At the conclusion of this program, the participant will be able to:

- Identify important risk assessment and biosafety practices for the mycobacteriology laboratory.
- Compare and contrast test methods for growth-based DST, ID, and molecular detection of MTBC.
- Describe mutations associated with drug resistance for MTBC and common correlations between mutations and growth-based results.
- Perform and interpret real-time PCR for the detection of MTBC.
- Discuss mycobacteriology case studies related to testing algorithms and interpretation of results.
- Explain the importance of assessing local data and quality performance measures for the mycobacteriology laboratory.
- Recognize accepted validation methods and regulatory standards for mycobacteriology testing.
- Describe next generation sequencing and its potential use in the mycobacteriology laboratory.

AUDIENCE

This course is intended for laboratorians with a minimum of one year experience in a laboratory that identifies MTBC and performs detection, isolation, ID, and DST with preference given to laboratorians working in public health laboratories.

CONTINUING EDUCATION

The Association of Public Health Laboratories (APHL) is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E.® Program. Participants who successfully complete this program will be awarded 27 contact hours. This course has been approved for 27 contact hours in the category (*Microbiology/Mycology/Parasitology*) for Florida Laboratory Licensees. Course # 588-101-18

LOCATION

Centers for Disease Control and Prevention, Atlanta, GA

SECURITY CLEARANCE REQUIREMENTS

NON-US CITIZENS – These courses will be held at the training laboratory on the CDC Roybal campus. Due to CDC requirements for security clearance, all non-US citizens will be asked to provide information needed to obtain clearance. Detailed instructions will be provided upon acceptance into the course. Please do not make any nonrefundable travel plans until you have received confirmation of acceptance into the course and security clearance approval. The information you provide will only be used for the purposes of attending this course.

APPLICATION & REGISTRATION

Application Deadline: November 30, 2017

- The **preliminary application** is to be completed online.
- Only completed applications received by the deadline will be considered. Application does not guarantee acceptance. If you are unable to complete the application online, email **Marisa Barley** or phone +1 240.485.3843.
- Public health applicants must have approval from their state or local laboratory director to apply. Students will be selected according to the degree to which the applicant's job description, experience, and responsibilities are consistent with the prerequisites. Priority will be given for one applicant per public health laboratory, with a second person considered on a space available basis.
- Notification of acceptance status will be sent via email after December 11, 2017.
- **Registration for this workshop is being offered at No Charge to the participants!** Registration and logistical details will be provided upon acceptance into the course.
- Some states have lengthy travel approval processes so begin as soon as possible. Do NOT make travel arrangements until you are notified of acceptance into the course.
- Participants are responsible for lodging, meals, and travel costs. A group lodging discount is being negotiated at the current federal per diem rate of $148.00 (plus tax and fees) per night. Details will be provided upon acceptance into the workshop.
- **Participants are required to bring a case study and testing algorithm from their laboratory to the course to present to course participants. More details to follow with application acceptance.**

QUESTIONS?

Please email **Marisa Barley**, APHL Customer Service.

PRELIMINARY AGENDA

Day 1 Tuesday, April 24, 2018

8:00 a.m.	Introduction and Course Overview
8:20	Safety Briefing
8:30	Tuberculosis Epidemiology in the United States
9:00	Risk Assessment
9:45	Break
10:00	Split Session A Group 1: Laboratory: Safe Biosafety Cabinet Practices Group 2: Lecture: Safety in the TB Laboratory & Pre-Test
11:00	Split Session B Group 1: Lecture: Safety in the TB Laboratory & Pre-Test Group 2: Laboratory: Safe Biosafety Cabinet Practices
12:00 p.m.	Lunch (on your own)
1:00	Considerations for Specimen Processing and Isolation of MTBC from Culture
2:00	Making the Pieces Fit: Combining Conventional and New Mycobacteriology Methods Using a Systems Approach
3:00	Break
3:15	Method Validation and Regulatory Issues
4:00	Class Exercise: Case Studies
4:30	Adjourn

Day 2 Wednesday, April 25, 2018

8:00 a.m.	NAAT for Direct Detection of TB
8:30	Mycobacterial Identification
9:30	Break
9:45	Considerations for Growth-based Drug Susceptibility Testing
11:00	Evaluation of MGIT Pyrazinamide Testing
11:30	Lunch (on your own)
1:00 p.m.	Monitoring the Performance of Your Laboratory
1:30	False-Positive and False-Negative Results
2:15	Break
2:30	Assessing Local Data
3:15	Class Exercise: Case Studies
4:15	Adjourn

Day 3 Thursday, April 26, 2018

8:00 a.m.	Introduction to Molecular Biology
8:45	Detection of *M. tuberculosis* complex & *M. avium* complex by real-time PCR
9:30	Break
9:45	Molecular Detection of Drug Resistance
10:30	Split Session A Group 1: Laboratory: Use of real-time PCR Assay for Detection of MTBC Group 2: Group Exercise: Group Scenarios
11:30	Lunch (on your own)
1:00 p.m.	Split Session B Group 1: Group Exercise: Group Scenarios Group 2: Laboratory: Use of real-time PCR Assay for Detection of MTBC
2:00	Use of Whole Genome Sequencing in Molecular Epidemiology
2:45	Break
3:00	Class Exercise: Case Studies
3:20	Group Exercise: Interpretation of real-time PCR Assay Results & Algorithm Speed Dating
4:30	Adjourn

Day 4 Friday, April 27, 2018

8:00 a.m.	Class Exercise: Case Studies
8:30	Post-Test
9:00	Break
9:15	Review Test Responses
9:30	Beyond the Laboratory Walls: Enhancing Your Integrated System
10:30	Case Studies: Big Picture
11:45	Evaluation
12:00 p.m.	Final Question and Answer
12:15	Adjourn

FACULTY

Division of Tuberculosis Elimination (DTBE), National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP), CDC, Atlanta, GA

Laboratory Branch, Reference Laboratory Team

- Beverly Metchock, DrPH, D(ABMM), Team Lead
- Jeff Driscoll, PhD, Sr. Service Fellow
- David Sikes, BS, MT(ASCP), Microbiologist

Laboratory Branch, Laboratory Capacity Team

- Stephanie Johnston, MS, Team Lead
- Cortney Stafford, MPH, MT(ASCP), Laboratory Consultant
- Mitchell Yakrus, MS, MPH, Microbiologist
- Monica Youngblood, MPH, M(ASCP), Laboratory Consultant

Laboratory Branch, Applied Research Team

- Glenn Morlock, MS, Microbiologist
- Melisa Willby, PhD, Microbiologist

Laboratory Branch, Systems Group

- Melinda Dunn, PhD, Safety Officer

Surveillance, Epidemiology, and Outbreak Investigations Branch

- Adam Langer, BS, DVM, MPH, Surveillance Team Lead

Field Services Branch

- Sapna Bamrah Morris, MD, MBA, Medical Officer

Office of Laboratory Safety, Office of the Associate Director for Laboratory Science and Safety (OADLSS), CDC, Atlanta, GA

- Dwayne Lasky, Safety and Occupational Health Manager

INVITED FACULTY

- Eileen M. Burd, PhD, D(ABMM), Director, Clinical Microbiology, Emory University Hospital, Atlanta, GA
- Jessica Gentry, BA, TB/Serology Laboratory Supervisor, Indiana State Department of Health Laboratory
- Tanya A. Halse, BS, Research Scientist, New York State Department of Health, Wadsworth Center
- Ryan Jepson, M(ASCP), Microbiology Supervisor, State Hygienic Laboratory at the University of Iowa
- Jan Owen, BS, TB Reference Team Lead, Texas Department of State Health Services

SPECIAL NEEDS

In compliance with the Americans with Disabilities Act (ADA), individuals seeking special accommodations should submit their request in writing at least three weeks prior to start date of the workshop to **Marisa Barley**. For more information phone +1 800.536.6586 or +1 240.485.3843.

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